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OPS/INGAA Meeting on Integrity Management

Houston, Texas

July 20 & 21, 2000

Purpose

This meeting is one of a series of meetings between OPS and State regulators and the gas pipeline industry on how best to add protection to pipeline segments in high consequence areas (HCAs). This meeting reviewed progress made in addressing two key integrity management issues: Incident Analysis and Practices, and Direct Assessment. The intended outcome of these meetings is a *technical basis document* developed by industry and docketed in support of a rulemaking.

Attendees

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Key Meeting Observations

Day 1 Discussion

The meeting got underway with presentations focusing on two major integrity management topics: Incident Analysis and Practices, and Direct Assessment. INGAA proposed a general structure to be used in future meetings to ensure that all attendees understand where the presentations fit in the INGAA efforts. This structure includes three elements: regulatory development, the prescriptive aspect of the rule and the performance-based aspects of the rule. The topics on which INGAA is working associated with each of these elements include:

Regulatory Development

- Incident analysis (HSB)
- Code Analysis (Battelle)
- HCA Definition (C-FER)

Prescriptive Aspects of the Rule

- In-line inspection
- Hydrostatic testing
- Direct Assessment
- Other Equivalent Approaches
- Third Party Damage

Performance-Based Aspects of the Rule

- Customized Plan
- Consensus Standard outlining issues and describing how each should be addressed

In discussing this structure, INGAA made the point that special consideration needs to be given to the management of third party damage. While all of the three primary assessment techniques (in-line inspection, hydrostatic testing, and direct assessment) are capable of identifying some evidence of past third party damage, none is reliable in detecting all significant damage, and none is designed to prevent damage from occurring immediately following an inspection. Therefore, the third party damage threat must be "managed", not simply periodically sought. OPS made the point that determining how to handle the challenge of third party damage is a critical point of the integrity management rule. The point was also made that there are two aspects of managing third party damage: prevention and detection of existing damage.

A brief exchange between INGAA and OPS reviewed the basis (Kiefner Report) of the INGAA contention that no existing techniques can detect existing third party damage with high confidence. One company pointed out that about 80% of third party damage induced failures occur immediately following the impact. A brief discussion on whether the liquid NPRM addresses third party damage noted that significant comments were received on this topic and that it will be addressed during the resolution of comments.

INGAA noted that more people are killed and injured during the conduct of in-line inspections than in the public as a result of pipeline accidents. These injuries and fatalities are related to work practices and improvements are being sought.

Incident Analysis and Practices

Prevention, detection and repair practices being used in the industry today were discussed. The purpose was to document "leading" practices. These practices were presented grouped under the significant incidents experienced by the gas pipeline industry to depict how the causes of historic incidents are being addressed with practices today. Many of the practices presented are discretionary (i.e., not required by the current regulations). The practices were not intended to be "best" practices, but rather "leading" practices.

Direct Assessment

Presentations were then made by INGAA on Direct Assessment. At the outset, OPS pointed out that whatever direct assessment is, it needs to include direct physical examination of the pipeline. OPS also noted that the direct assessment process should be "results driven", but that as in the liquid pipeline NPRM, there will likely be a need to specify a time frame during which baseline assessments must be completed. The question was also asked whether there needs to be an industry recommendation (perhaps in the consensus standard) that would describe a time frame for response (dig and repair) depending on the evidence of the severity of the observed defect. The group agreed that the limits of applicability for direct assessment need to be identified.

The key points made during the discussion included:

- Direct assessment is a process in which numerous proven technologies are applied in a structured way to look for indications of corrosion damage to the pipeline;
- Three "layers" of non-destructive examination are involved in direct assessment ranging from a "Macro" survey, through "Micro" evaluation finally to direct examination of suspect pipeline segments;
- The purpose of the staged application of technologies is to focus more and more closely on pipe segments where indications of potential integrity concerns exist;
- The point was made that some confirmatory physical examination of the pipeline will be carried out in each HCA, even if there is no reason to suspect an integrity concern;
- Excavation and direct examination of the pipeline segments where the most significant indications of potential integrity concerns exist will be carried out until clear evidence exists of no need for further examination or repair; and

- The direct assessment process will include an evaluation (using data about the pipeline physical features, its history and the environment in which it operates) of the potential for corrosion damage in other segments of the pipeline where "like and similar" conditions exist.

Fred Joyner, OPS, concluded the first day meeting by noting that Stacey Gerard, OPS, has asked him to be the point person for interactions with the Gas Pipeline industry during the next four months. OPS needs to better understand exactly what "direct assessment" is and the industry intent on the conditions under which it is appropriate to apply these techniques.

AGA raised the question of whether any further consideration has been given to the treatment in the integrity rule of piping operated at 30% SMYS or less. OPS is still considering this issue, and is open to any technical input the industry group can provide.

Day 2 Discussion

Discussion on the second day revolved around the topic of direct assessment. The objective was to arrive at a mutual understanding of what direct assessment is that is agreeable to INGAA and to OPS. (The draft definition agreed upon is shown below). Key points made in moving toward an agreeable definition are shown below.

- The direct assessment process can be described by a decision diagram in which information on the physical features of the pipeline, its history and the environment in which it operates are combined with information derived from a series of non-destructive tests to make decisions on whether to (a) dig up the pipeline and physically examine it, (b) acquire more data to determine whether a concern about its integrity exists, or (c) take no action since no concerns exist about the integrity of the pipeline.
- All HCAs would be subject at a minimum to a close-interval survey (CIS), and if no concerns arose from the CIS, then a confirmatory excavation and physical examination would be carried out.
- If concerns were revealed by the CIS, then a series of other examinations would be carried out to explore whether there is any basis for the initial concern.
- Direct assessment (as are in-line inspections and hydro testing) is not a reliable technology for detecting residual third party damage. Therefore, this issue needs to be managed using other techniques that will be described at future meetings.
- Other concerns such as shorted casings under roadways and pipelines under paved areas where excavation will be difficult will need to be considered and discussed at future meetings.
- Examination of an excavated pipe segment would include: cleaning and visually inspecting the coating for continuity, using a "Holiday" test to check for coating continuity, looking for coating disbondment, and ultrasonic testing.

After considerable discussion, the draft definition of direct assessment was agreed upon.

Tentative Definition of "Direct Assessment"

Direct Assessment is the structured process that defines locations where the pipeline is physically examined to provide supplemental assurance of pipeline integrity in all HCAs. This process begins with the assembly and analysis of data on the physical features of the pipeline, its history and the environment in which it operates. These analyses then support a focusing assessment process that integrates the results of proven standardized assessment technologies (need list) to identify the areas in which physical examination is needed. Physical examination includes coating examination and other applicable non-destructive testing. Physical examination on the areas of greatest concern continues until no further need for examination or repair is revealed.

Telephone discussion of this tentative definition with Stacey Gerard showed general agreement. In addition, Gerard stated that she wants everyone to understand that we should consider HCAs to be geographic areas definable on a map. The *levels of protection* associated with regions within each HCA need to be considered and decided upon separately from this geographic definition. Gerard also stated that she would like to reach agreement on the treatment of new technologies in the future. The following statement was proposed and generally agreed upon.

Agreement on New Technologies

It is our intent that, over time, OPS will work with pipeline operators to move toward a comprehensive (integrity) program that incorporates the best proven technologies.

Future Agenda Items

The following topics were noted as requiring additional discussion.

- Techniques to manage third party damage,
- HCA definition and levels of protection required within each HCA,
- Impact on rulemaking on Intrastate pipelines (e.g., pipes operating under 30% SMYS),
- Direct assessment issues such as shorted casing and pipelines under paved areas,
- How all the pieces of the proposed INGAA technical approach integrate to provide a higher level of assurance of pipeline integrity,